MEMORANDUM

Date: 12/20/2013

To: Miranda Redinger, Alicia McIntire and Steve Szafran, City of Shoreline
CC: Mandi Roberts, Otak

From: Kendra Breiland and Aaron Gooze, Fehr & Peers

Subject: **Shoreline 185th Street Station Subarea Plan: Existing Transportation Conditions and Initial Findings**

BACKGROUND

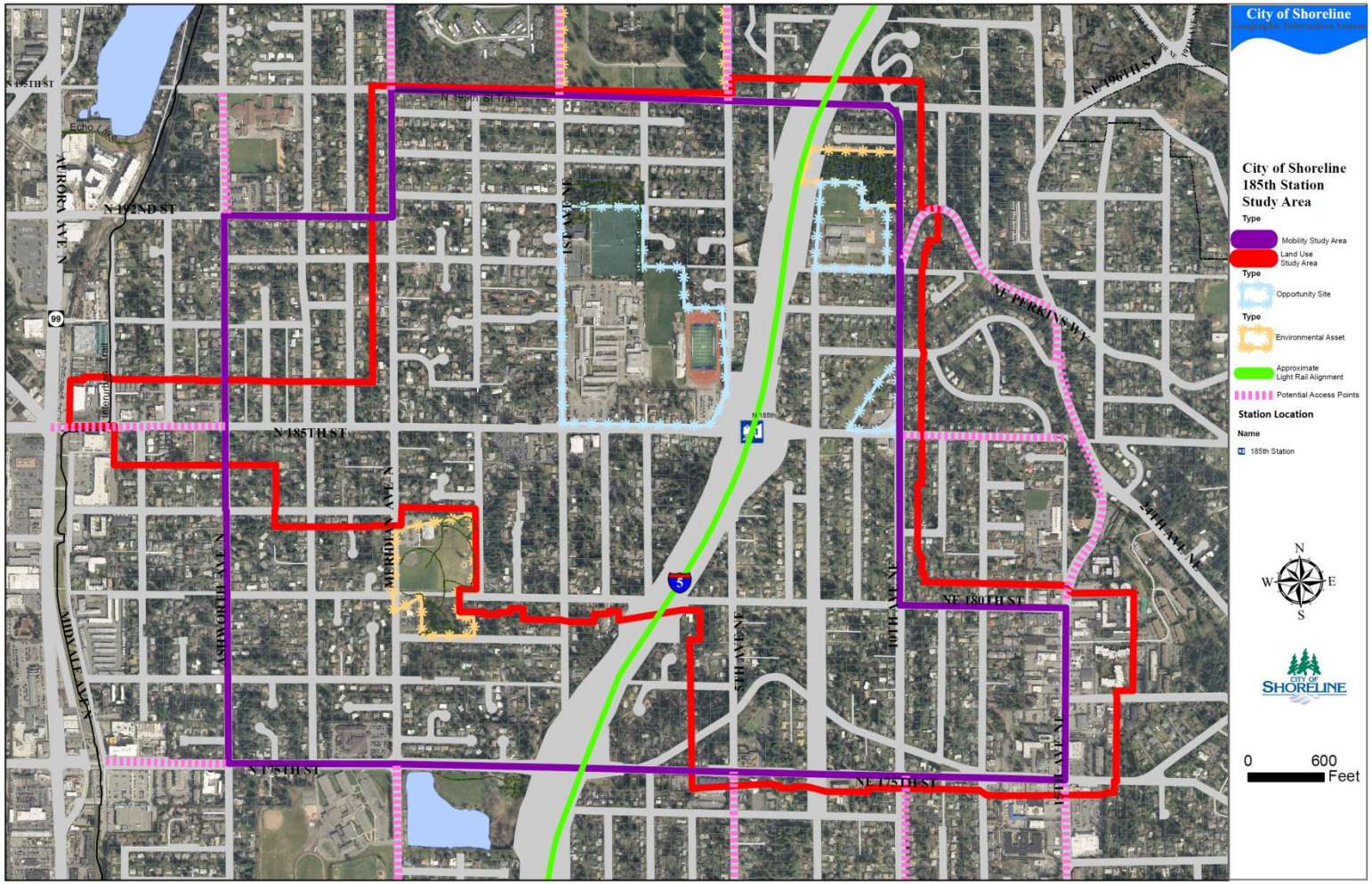
The City of Shoreline is evaluating existing conditions as part of a 185th Street Station subarea plan. In order to provide relevant details and constructive analysis, the project team conducted field visits and reviewed relevant plans for the area, including:

- 2013 Sound Transit Draft Environmental Impact Statement (DEIS)
- 2011 Shoreline Transportation Master Plan (TMP)
- 2012 Shoreline Comprehensive Plan (CP)
- City of Shoreline Vision 2029 Plan
- 2013 PSRC Growing Transit Communities Report (GTC)
- King County Metro Strategic Plan 2012
- Community Transit Long Range Plan 2011
- Sound Transit Long Range Plan 2005
- 2013-2018 Capital Improvement Plan (CIP)

STUDY AREA

The City of Shoreline has identified two study areas for this evaluation. A mobility study area, which is roughly bounded by N/NE 175th Street to the south, Ashworth Avenue N to the west, N/NE 195th Street to the north and 15th Avenue NE and 10th Avenue NE to the east. **Figure 1** displays the boundaries of the Mobility Study Area and the Land Use Study Area.

Figure 1. 185th Station Plan Study Area



TRANSPORTATION NETWORK

Regional Access

I-5 is a limited access freeway classified as a "highway of statewide significance". It provides access from the study area south to Northgate, the University District, Capitol Hill and Downtown Seattle and beyond as well as to Mountlake Terrace, Lynnwood and points north. Additionally, I-5 serves as the key corridor for express regional bus service in the area. The nearest access points between the study area and I-5 are the NE 145th Street, NE 175th Street and NE 205th Street interchanges.

Arterial and Local Access

SR-99 is also classified as a "highway of statewide significance" and serves as a primary arterial for Shoreline. It lies directly west of the study area and also provides north-south mobility in the area while offering business access along the corridor.

The primary arterials in the study area are N/NE 175th Street and 15th Avenue NE, which form the southern and eastern edge. Minor arterials within the area include N/NE 185th Street and the portion of 5th Avenue NE south of NE 185th Street. **Figure 2** highlights the street classification of the network within the study area.

Pedestrian and Bicycle Facilities

Existing Conditions

As identified in the 2011 TMP, the study area includes a variety of bicycle facility types, including sharrows, bike lanes and paths.

Figure 3 details the current sidewalk and bicycle infrastructure while highlighting some gaps in connectivity to the station area. Currently, the North City area along 15th Avenue NE and areas south of NE 175th Street lack a dedicated non-motorized connection to the station location. **Figure 4** highlights the relative level of bicycle stress present on the study area street segments.. Bike Stress is an index that utilizes a street's functional class, speed limit and bicycle lane presence to weight the relative traffic stress a cyclist would experience.

Figure 2. Street Functional Class

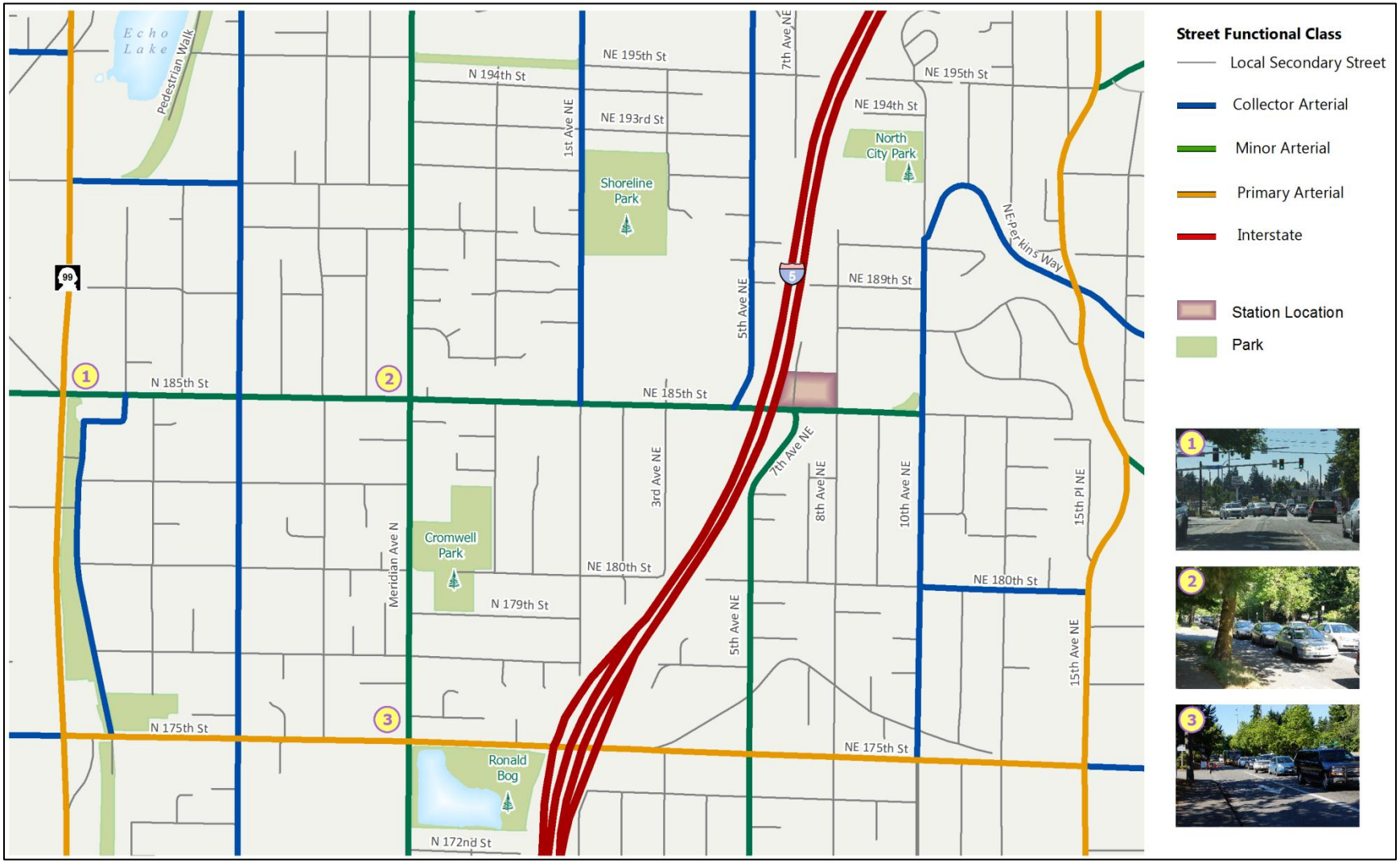


Figure 3. Current Pedestrian and Bicycle Conditions

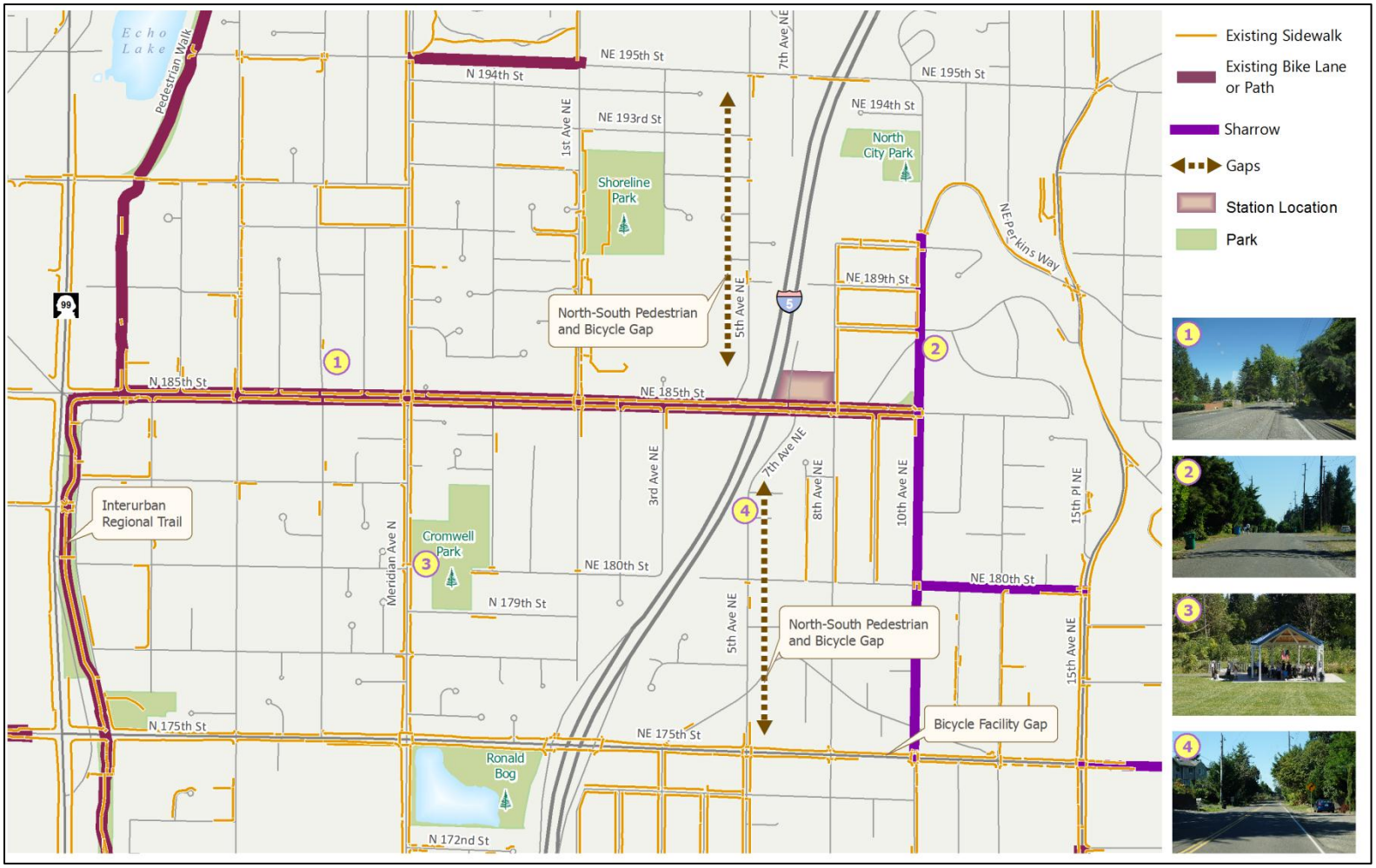
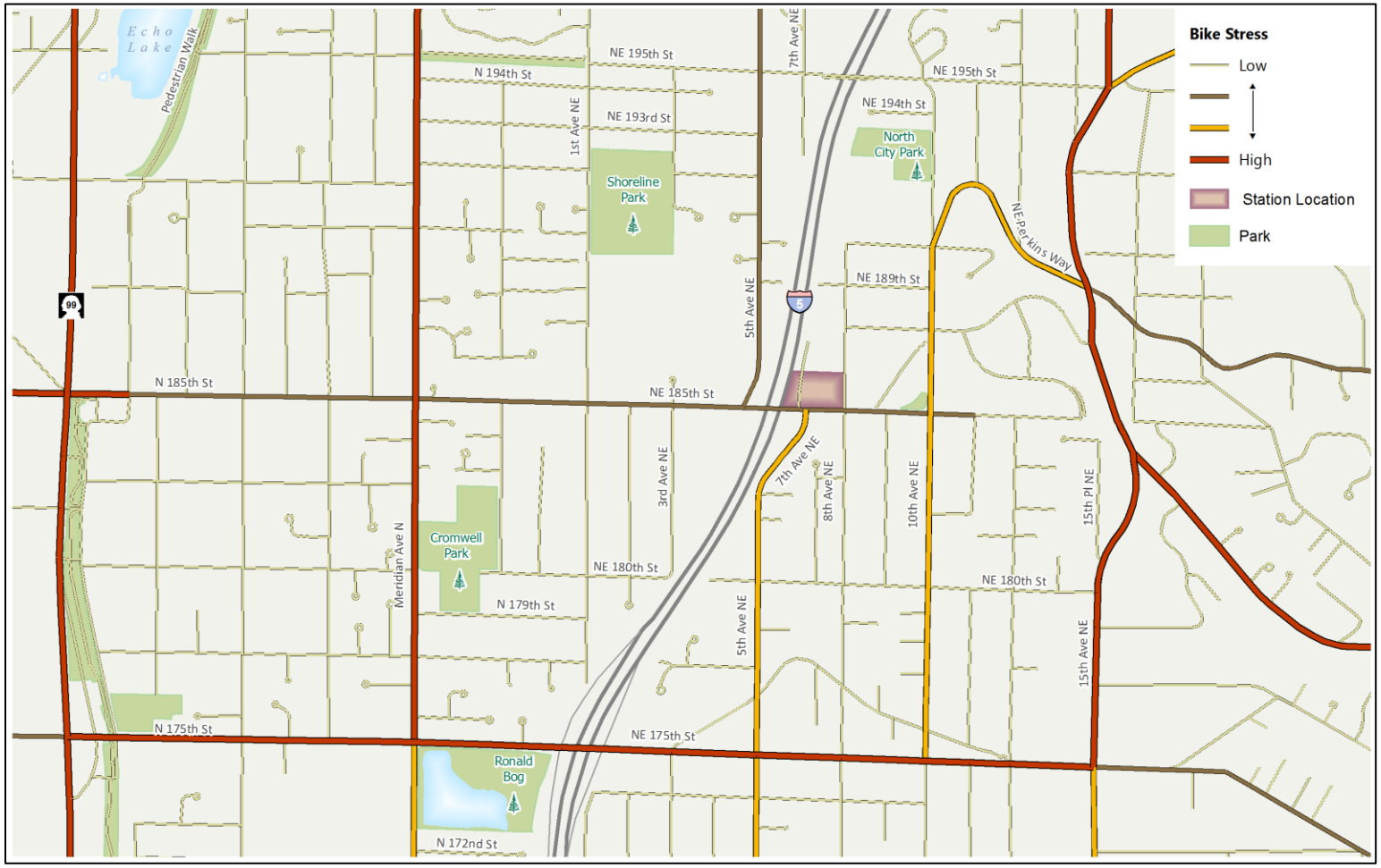


Figure 4. Levels of Bike Stress on Street Segments



Planned Improvements

The 2011 TMP identified a number of improvements to address these issues, some of which have recently been completed or are currently funded. Recently completed or funded projects include an extension of the existing bicycle lane on NE 185th Street from 1st Avenue NE to 10th Avenue NE, an extension of the NE 195th Street trail east to 5th Avenue NE, and completion of the Interurban-Burke Gilman Connector on N/NE 195th Street, 10th Avenue NE and NE Perkins Way, as shown in **Figure 5**. This connector is a combination of off-street trails and signage to assist cyclists in navigating between the two major regional trails. Sound Transit will need to reconstruct the NE 195th Street pedestrian and bicycle bridge that crosses Interstate 5, as construction of the light rail alignment will necessitate its removal. The pedestrian plan in **Figure 6** details a full build-out of the pedestrian improvements including dedicated north-south connections along 5th Avenue NE and Meridian Avenue N. Additionally, future sidewalk construction would provide a connection to the North City neighborhood through NE 180th Street and 10th Avenue NE.

Figure 5. Bicycle Improvements Identified in the Transportation Master Plan

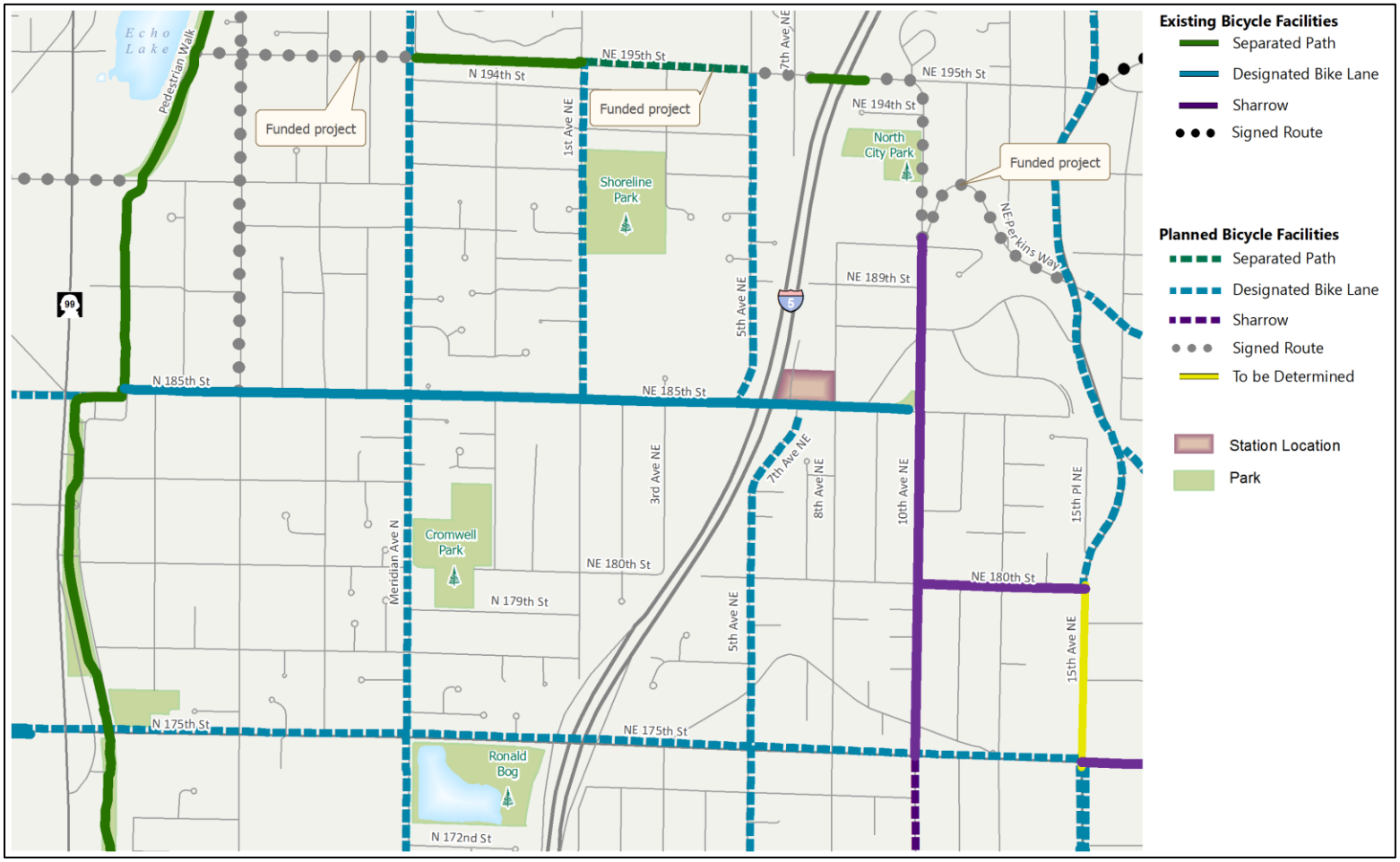
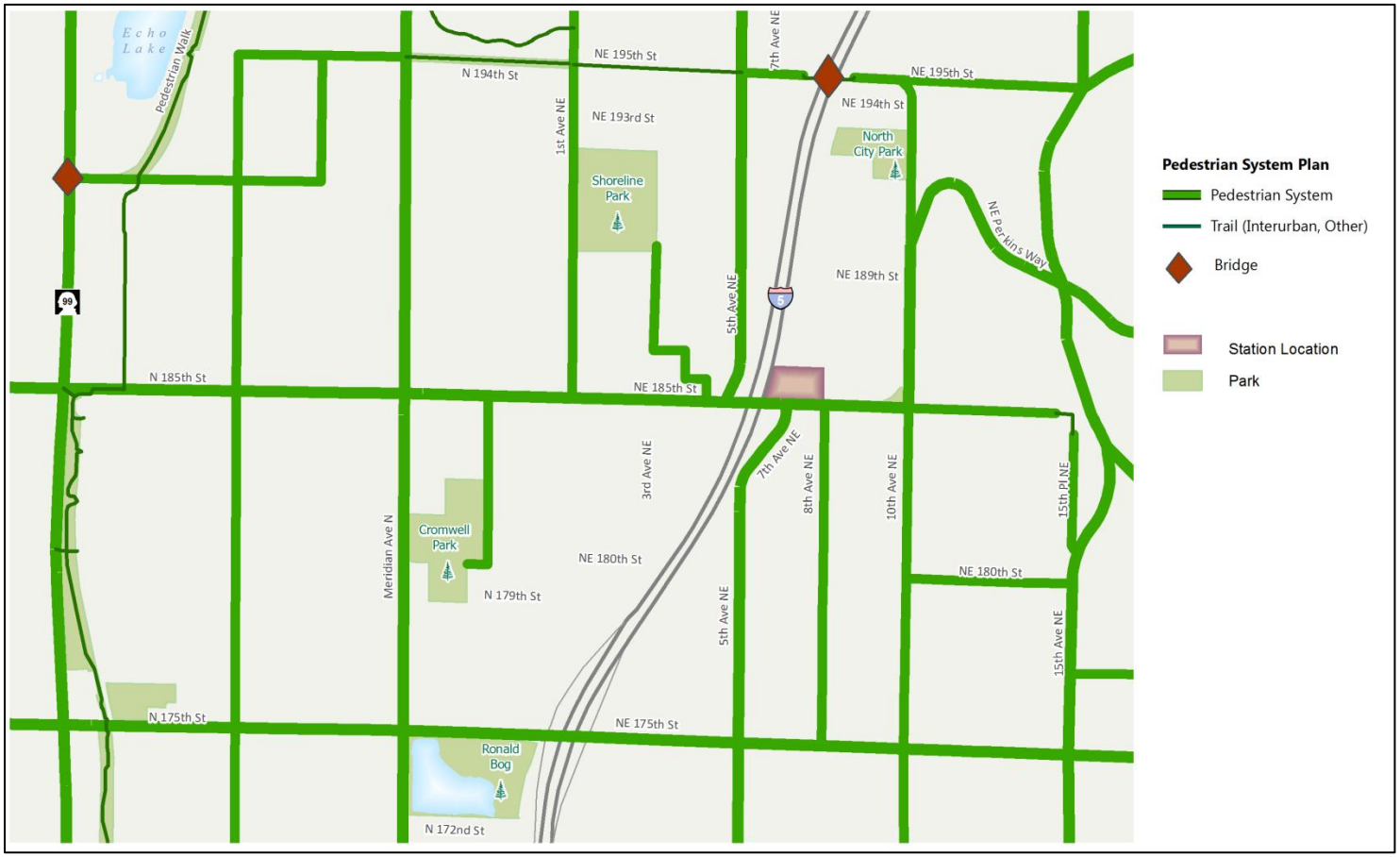


Figure 6. Pedestrian Improvements Identified in the Transportation Master Plan



Transit Provision

Existing Conditions

The transit coverage within the study area is provided by King County Metro Transit. **Table 1** details the current headways and destinations serviced by routes that traverse near the potential station location while **Figure 7** highlights the location of the routes.

Table 1. Transit Provision Details

Route	Weekday Headways (in minutes)				Destinations Serviced
	AM Peak (6-9am)	Midday	PM Peak (3-6pm)	Evening	
All-day Routes					
346	30	30	30	60	Aurora Village, Northgate
347	30	30	30	60	Northgate, Ridgecrest, Mountlake Terrace
348	30	30	30	60	Richmond Beach, North City
358	5-15	15	5-15	30	Downtown Seattle, Aurora Village
Peak Period Routes					
77	15-25	-	15-30	-	Maple Leaf, Downtown Seattle
301	15	-	15	-	NW Shoreline, Downtown Seattle
303	15	-	15	60	Northgate, Downtown Seattle, First Hill
316	15-20	-	15-25	-	Bitter Lake, Green Lake, Downtown Seattle
373	15	-	15	-	University District, Maple Leaf

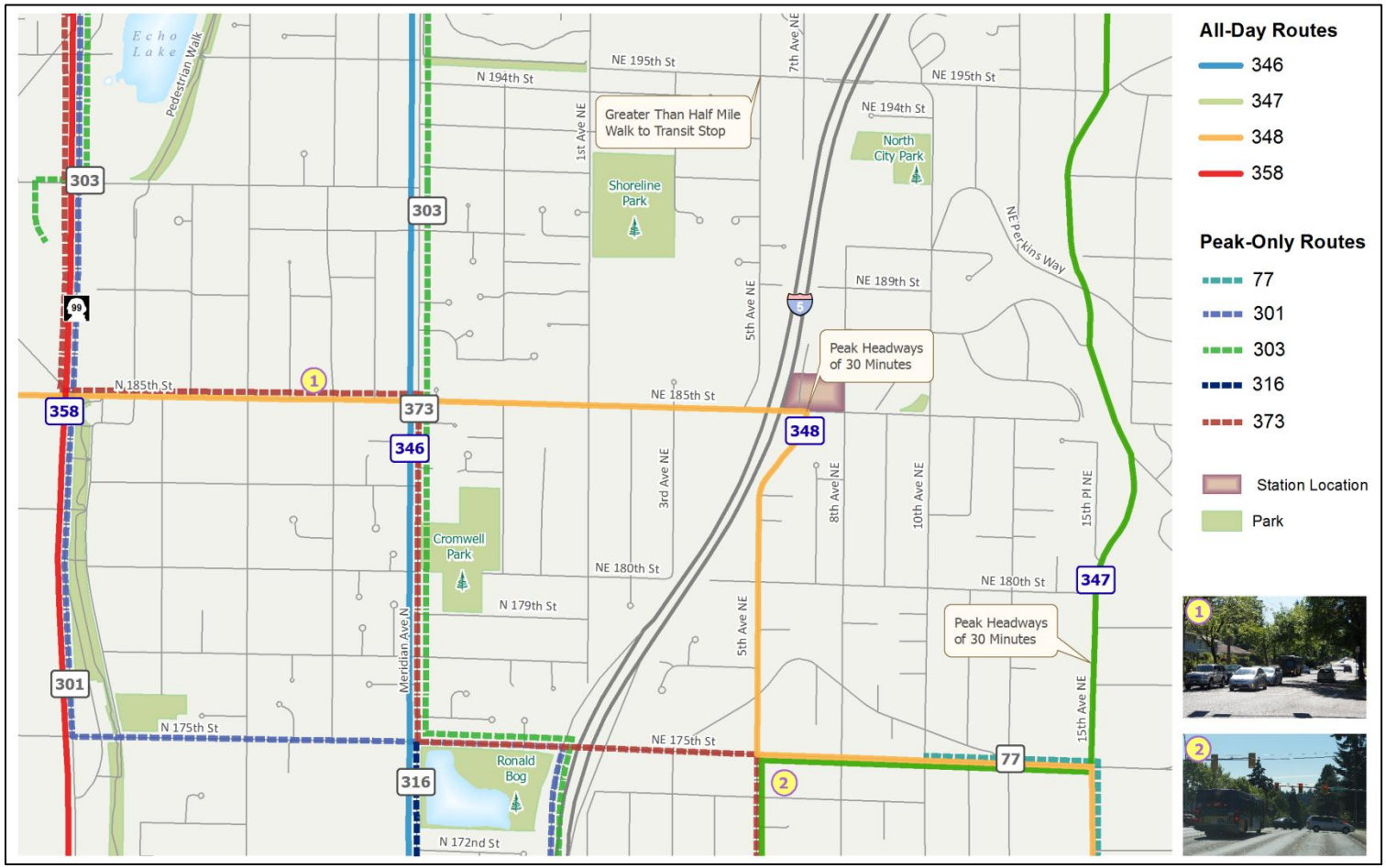
Source: Fehr & Peers 2013

Overall, the transit agency provides adequate geographic coverage during the peak period with only a small portion of the area not located within a half-mile walk to a transit stop. Direct service to the station location is provided by Route 348, with headways of 30 minutes during the peak and midday periods. There is a notable gap during the off-peak periods in the east-west direction with the only service in this direction provided along N/NE 185th Street. While the North City area along 15th Avenue NE is serviced by 30 minute peak and midday headways, the combined frequency at the corner of NE 175th Street and 15th Avenue NE is improved due to multiple routes serving that location.

Planned Improvements

While the City of Shoreline does not have direct control over the transit service within its boundaries, a number of conceptual modifications with light rail deployment are identified in the TMP. This includes a diversion of existing routes to focus service on east-west connections to the station location. As part of this process, the city is currently engaged with Community Transit, King County Metro and Sound Transit over the next two years as part of the development of a Transit Service Integration Plan. Community Transit is considering the future 185th station as a potential route terminus for the Swift Bus Rapid Transit line with service to Everett along SR-99. Additional modes that could be implemented by the City of Shoreline to operate in coordination with transit include bike sharing or car sharing programs, with organizations such as Zipcar, Car2Go or Puget Sound Bike Share.

Figure 7. Current Transit Provision



Traffic Operations

Existing Conditions

The recently completed update to the TMP provides information regarding current traffic operations. As shown in **Figure 8**, traffic congestion on streets bordering the station location is low, with volume-to-capacity (V/C) ratios under 0.8 for the PM peak period[1]. The current Level of Service (LOS) standard for a V/C ratio on Principal and Minor arterials within the City of Shoreline is 0.9. Additionally, 5th Avenue NE, to the north and south of the station location on NE 185th Street currently carries fewer than 5,000 vehicles per day and experiences low levels of congestion. The areas with the highest amount of congestion include NE 175th Street and Meridian Avenue N, with V/C ratios above 0.8. As a result of the demand along these streets, there are a number of intersections with higher levels of congestion in the PM peak periods; however they still operate within the City's Adopted LOS of D. The intersection at N 175th Street and Meridian Avenue N experiences queue lengths of 10 to 30 vehicles but currently operates at LOS D in the PM peak period. Additionally, the intersection of N 185th Street and Meridian Avenue N operates at LOS D. Other intersections within the study area experience relatively less congestion and operate at level of service C or better.

Planned Improvements

Figure 9 highlights projects identified in the TMP to address some of these issues in order to accommodate future planned growth. The two intersections along Meridian Avenue N have been identified for improvements such as extended turn pockets, lane rechannelization and signal coordination. Additionally, plans call for the reconfiguration of Meridian Avenue N and N/NE 175th Street to allow for two-way left turn lanes. The TMP also identifies rechannelization of NE 185th Street from 1st Avenue NE to 10th Avenue NE to accommodate future traffic growth.

[1] Based upon data from the 2011 TMP update

Figure 8. Current Traffic Conditions

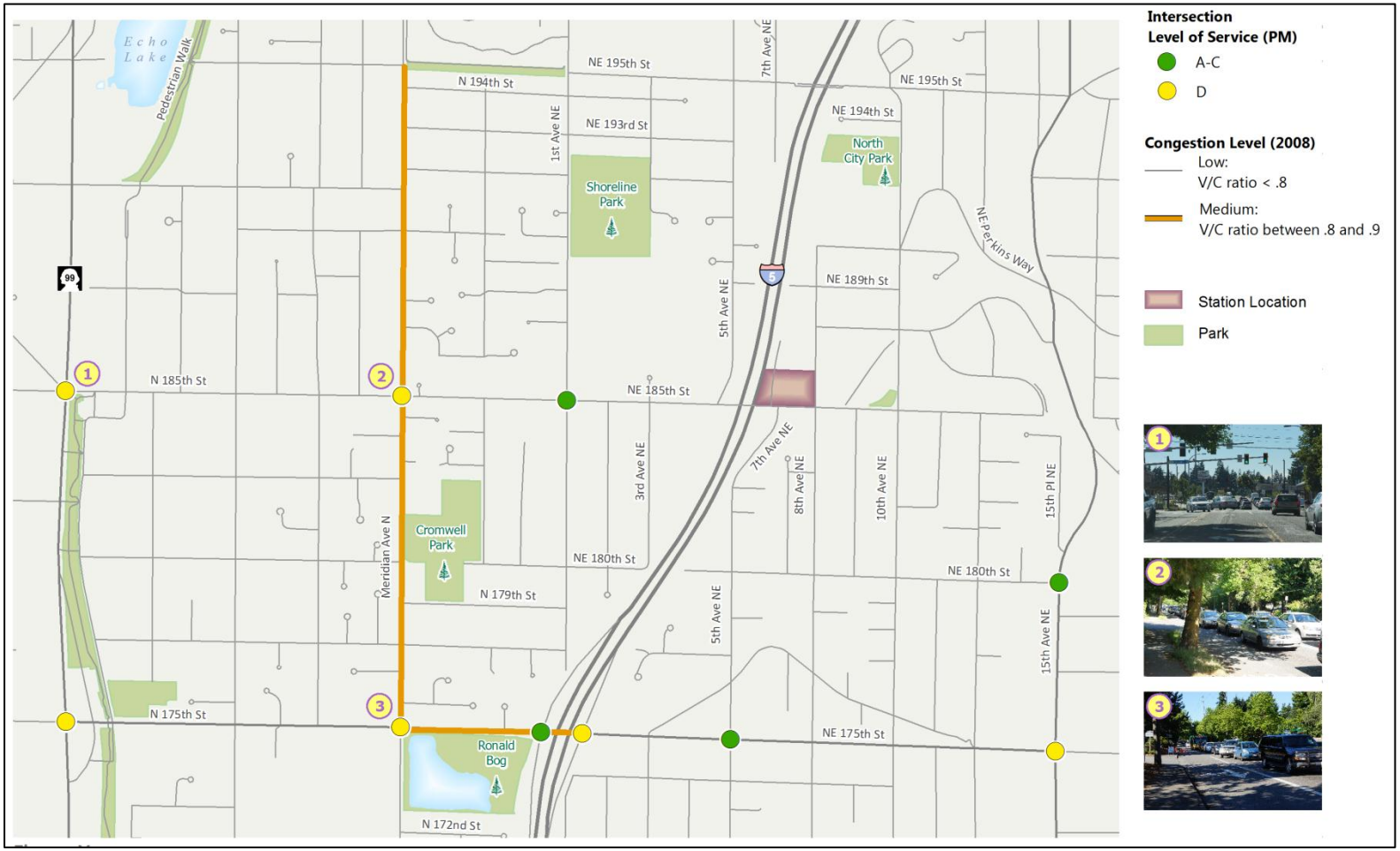
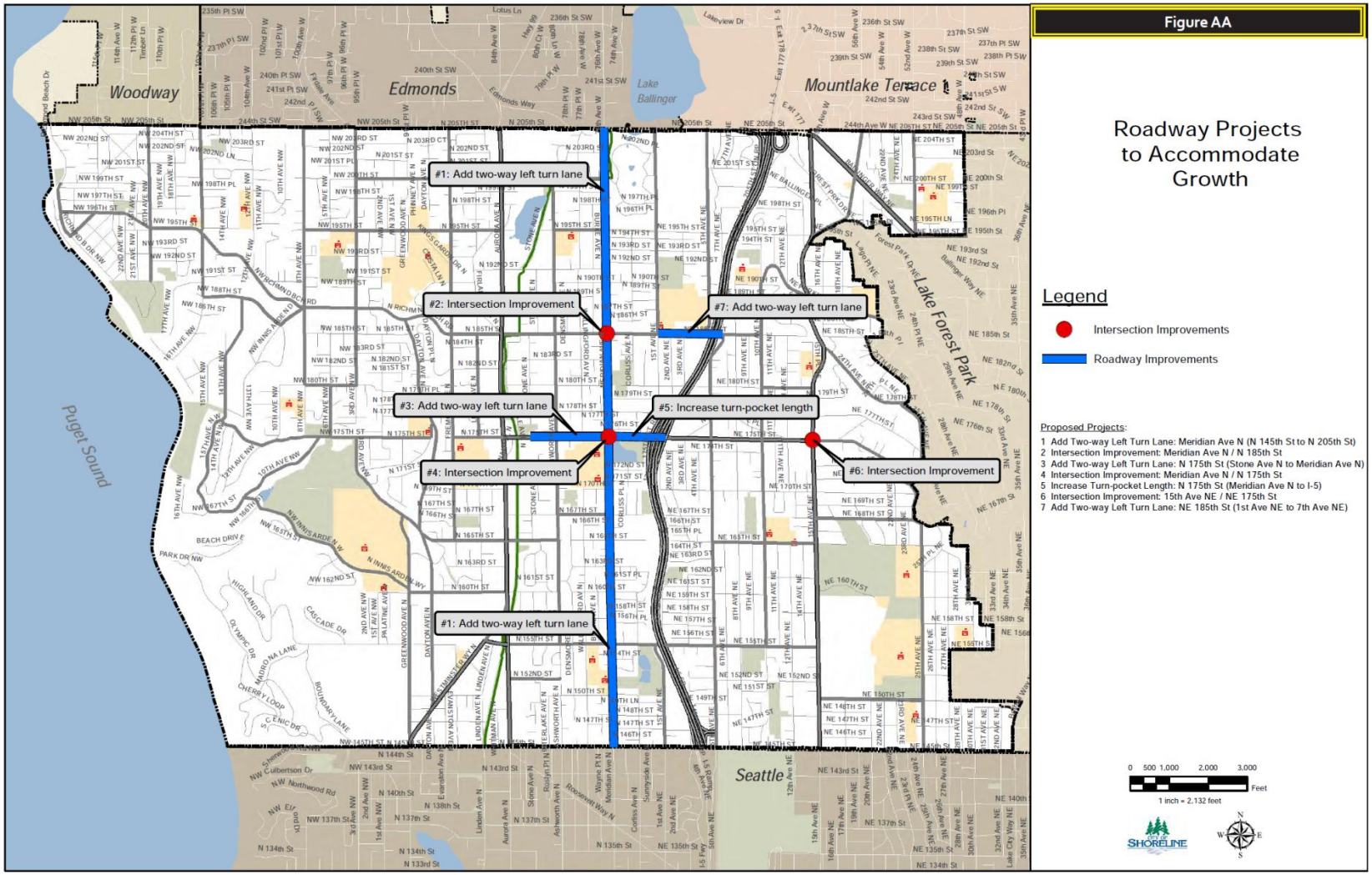


Figure 9. Roadway Projects Identified in the Transportation Master Plan



Opportunities and Challenges

Based on the existing and planned conditions analysis, a number of opportunities and challenges for the proposed station area have been identified as shown in **Figure 10**.

N 185th Street

Operating as a key access connector, N/NE 185th Street presents both an opportunity and a challenge as vehicles, transit, pedestrians and bicyclists will compete for limited right-of-way. Planned correctly, this east-west connection could provide a vital multi-modal link for surrounding neighborhoods to the station location.

Trail and Non-Motorized Connections

With the proximity of the regional Interurban Trail, an opportunity exists to provide a seamless non-motorized connection to the proposed station for pedestrians and bicyclists. This includes the enhancements planned and funded for N 195th Street along with a potential trail connection utilizing available right-of-way near I-5. A north-south connection from N 195th may be challenging along 3rd Ave NE near Shoreline Park due to limited right-of-way however 1st Avenue NE exhibits low traffic and may be an additional option for this connection as identified in the TMP. Finally, the space along 8th Avenue NE may present a challenge due to utility constraints, but the available right-of-way could be leveraged for additional non-motorized connection opportunities.

North City Retail Area

There are a number of options to take advantage of the existing retail and multifamily uses located within the North City neighborhood. These include enhancing the current bicycle and pedestrian connection along NE 180th Street and 10th Avenue NE, as well as potentially utilizing the large power line right-of-way along 8th Avenue NE. While the slopes of NE 185th Street near 15th Avenue and along NE Perkins Way present a challenge, an existing, informal pedestrian-only connection exists at 15th Place NE and NE 185th Street in the form of a footpath.

Activity Centers

The station area currently encompasses a number of activity centers, including Cromwell Park, the Shoreline Center, the North City Elementary school site and the North City Park. These centers provide for a set of destinations in which to build a comprehensive non-motorized access plan from the station location. Ensuring suitable access to these areas will assist in enhancing bicycle and pedestrian connections.

Traffic and Transit Operations

The intersections along Meridian Avenue N and N 175th Street will present challenges to vehicle and transit service due to existing and future congested conditions. Additionally, an increase in transit service frequency to the station location requires careful planning to ensure adequate coverage throughout the City. Traffic volumes will increase with automobile access to the station from the region which will potentially impact non-motorized access as well as existing neighborhood character. While it is difficult to project future cut-through traffic along residential streets, plans should incorporate a process to assess and react to fluctuations in cut-through traffic.

Figure 10. Opportunities and Challenges Identified within the Study Area